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| 10/596,330 | 06/09/2006 | William L. Keith | US030489US2 | 5371 |

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| EXAMINER |
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LE, TUNG X

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| ART UNIT | PAPER NUMBER |
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2821

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08/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/596,330 | Applicant(s) KEITH ET AL. | |
| | Examiner TUNG X. LE | Art Unit 2821 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment submitted 04/25/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,8,10,11,13 and 17 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 14-16, 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Applicants' amendment submitted on April 25, 2008. In virtue of this amendment:

- Claims 2, 7, and 12 are cancelled; and
- Thus, claims 1, 3-6, 8-11, and 13-18 remain pending in the instant application.

Response to Arguments

1. Applicants' argument on the amended claims 1, 6, and 11 with respect to the cited prior to Lin have been seriously considered but are moot in view of the new ground of rejections. The rejections are being made as follows:

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5-6, 8, 10-11, 13, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Muegge et al. (U.S. Publication No. 2004/0037094 A1).

With respect to claim 1, Muegge inherently discloses in figure 3 a method for open circuit voltage regulation for an electronic ballast comprising providing a regulating pulse width modulator (PWM) (having a pulse width modulating controller [70] for controlling an output driving voltage to the load) having an output voltage threshold limit (having an output voltage reference [V_{REF}] set to control the output voltage of the ballast) threshold ; sensing an output voltage (having a transformer [T1] for sensing the

output voltage of the ballast to generate a sensed signal to the comparator [151]) from the electronic ballast to generate a sensed output voltage signal [105]; comparing the sensed output voltage signal to the output voltage threshold limit (having a comparator [151] for comparing the two signals); and limiting the output voltage when the sensed output voltage signal exceeds the output threshold limit by limiting a pulse width of pulses output from the regulating pulse width modulator (paragraphs [0038, 0074]).

With respect to claim 3, Muegge inherently discloses the method that wherein sensing the output voltage from the electronic ballast to generate the sensed output voltage signal comprises sensing a tank current (having a tank current follows through a tank inductor [L1]) in the electronic ballast (figure 7).

With respect to claim 5, Muegge inherently discloses the method that wherein sensing the output voltage from the electronic ballast to generate the sensed output voltage signal comprises sensing output voltage directly (figure 3).

With respect to claim 6, Muegge discloses in figure 3 a system for open circuit voltage regulation for an electronic ballast comprising means for modulating pulse width (having a pulse width modulating controller [70] for controlling an output driving voltage to the load) having an output voltage threshold limit (having an output voltage reference [V_{REF}] set to control the output voltage of the ballast); means for sensing an output voltage (having a transformer [T1] for sensing the output voltage of the ballast to generate a sensed signal to the comparator [151]) from the electronic ballast to generate a sensed output voltage signal [105]; means for comparing the sensed output voltage signal to the output voltage threshold limit (having a comparator [151] for

comparing the two signals); and means for limiting the output voltage when the sensed output voltage signal exceeds the output voltage threshold limit (paragraphs [0038, 0074]).

With respect to claim 8, Muegge discloses that the means for sensing output voltage from the electronic ballast to generate the sensed output voltage signal comprises sensing a tank current (having a tank current flows through a tank inductor [L1]) in the electronic ballast (figure 7).

With respect to claim 10, Muegge discloses that the means for sensing output voltage from the electronic ballast to generate the sensed output voltage signal comprises means for sensing output voltage directly (figure 3).

With respect to claim 11, Muegge discloses in figure 3 an open circuit voltage regulation circuit for an electronic ballast comprising an filament current sensing circuit (having a transformer [T1] for sensing the output voltage of the ballast to generate a sensed signal to the comparator [151]) operably connected to an output of the electronic ballast and generating a sensed output voltage signal [105]; and a regulating pulse width modulator (having a pulse width modulating controller [70] for controlling an output driving voltage to the load) receiving the sensed output voltage signal and operably connected to control a voltage (V_{out}) at the output of the electronic ballast, the regulating pulse width modulator having an output threshold limit (having an output voltage reference [V_{REF}] set to control the output voltage of the ballast); wherein the regulating pulse width modulator limits the voltage at the output of the electronic ballast

when the sensed output voltage signal exceeds the output voltage threshold limit [60] (paragraphs [0038, 0074]).

With respect to claim 13, Muegge discloses in figure 3 that wherein the filament current sensing circuit is responsive to tank current (having a tank current follows through a tank inductor [L1]) in the electronic ballast (figure 7).

With respect to claim 17, Muegge discloses that the ballast further comprises a tank circuit operably connected to the output of the electronic ballast and having a resonant capacitor [C1]; and the filament current sensing circuit is operably connected between the resonant capacitor and a common rail (figure 7).

Allowable Subject Matter

4. Claims 4, 9, 14-16, and 18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record fails to disclose or fairly suggest:

- The method for open circuit voltage regulation for an electronic ballast further comprising step of sensing the tank current comprises *sensing a voltage across a resistance between a resonant capacitor and a common rail* as claimed in dependent claim 4.
- The system for open circuit voltage regulation for an electronic ballast, the system further comprises the mean for *sensing the tank current comprising*

means for sensing a voltage across a resistance between a resonant capacitor and a common rail as claimed in dependent claim 9.

- The open circuit voltage regulation circuit for an electronic ballast, the regulation circuit further comprising a tank circuit, a resonant capacitor, and *the filament current sensing circuit comprises a resistance between the resonant capacitor and a common rail as claimed in dependent claim 14* (claim 15 would be allowable as being dependent on claim 14).
- The open circuit voltage regulation circuit for an electronic ballast, the regulation circuit further comprises a high voltage divider operably connected to be driven by the regulating pulse width modulator, and the regulating pulse width modulator limits the voltage at the output of the electronic ballast by driving the high voltage driver at a limited pulsed width as claim in dependent claim 16.
- The open circuit voltage regulation circuit for an electronic ballast, the regulation circuit further comprising the filament current sensing circuit is selected from the group consisting of a resistive voltage divider, a voltage stepdown transformer, and a current transformer as claimed in dependent claim 18.

Inquiry

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUNG X. LE whose telephone number is (571)272-6010. The examiner can normally be reached on 8:30 AM - 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tung Le
08/04/2008

/David Hung Vu/
Primary Examiner,
Art Unit 2821